

CLAIMS

What is claimed is:

1. An intervertebral disc replacement device for replacing at least portions of at least two intervertebral discs in a spinal column, comprising:

a first member having a first vertebral contact surface and a first flange including at least one through hole for receiving a bone screw for fastening the first member to a first vertebral bone of a spinal column, and at least one fastener hole; and

a first intermediate member having a first intermediate vertebral contact surface and a first intermediate flange including at least one fastener hole, the first intermediate vertebral contact surface being operable to couple to an endplate of an intermediate vertebral bone adjacent to the first vertebral bone of the spinal column,

wherein the fastener holes of the first flange and the first intermediate flange are sized and positioned to receive at least one fastener operable to couple a first insertion plate thereto such that the first member and the first intermediate member are oriented in registration with one another for simultaneous insertion into a first intervertebral disc space defined by respective endplates of the first and intermediate vertebral bones.

2. The intervertebral disc replacement device of claim 1, further comprising:

a second intermediate member having a second intermediate vertebral contact surface and a second intermediate flange including at least one fastener hole, the second intermediate vertebral contact surface being operable to couple to an opposite endplate of the intermediate vertebral bone of the spinal column; and

a second member having a second vertebral contact surface and a second flange including at least one through hole for receiving a bone screw for fastening the second member to a second vertebral bone adjacent to the intermediate vertebral bone of the spinal column,

wherein the fastener holes of the second flange and the second intermediate flange are sized and positioned to receive at least one fastener operable to couple a second insertion plate thereto such that the second member and the second

intermediate member are oriented in registration with one another for simultaneous insertion into a second intervertebral disc space adjacent to the first intervertebral disc space and defined by respective endplates of the intermediate and second vertebral bones.

3. The intervertebral disc replacement device of claim 2, wherein the first and second insertion plates cooperate to orient the through holes of the first and second flanges of the intervertebral disc replacement device to have a configuration substantially similar to that of a spinal fusion plate when viewed from at least an anterior vantage point.

4. The intervertebral disc replacement device of claim 2, wherein at least one of:

the first insertion plate cooperates to engage and orient the first member and the first intermediate member for simultaneous insertion into the first intervertebral disc space; and

the second insertion plate cooperates to engage and orient the second member and the second intermediate member for simultaneous insertion into the second intervertebral disc space.

5. The intervertebral disc replacement device of claim 4, wherein:

the first insertion plate includes a base, a first mounting element of the base operable to engage the first member of the intervertebral disc replacement device, and a first intermediate mounting element of the base operable to engage the first intermediate member of the intervertebral disc replacement device;

the second insertion plate includes a base, a second mounting element of the base operable to engage a second member of the intervertebral disc replacement device, and a second intermediate mounting element of the base operable to engage the second intermediate member of the intervertebral disc replacement device; and

the first and first intermediate mounting elements are offset with respect to one another and the second and second intermediate mounting elements are offset with respect to one another relative to a longitudinally directed axis of the bases running substantially parallel to a longitudinal axis of a spinal column such that the first and

second intermediate mounting elements do not interfere with one another when the first and first intermediate members of the intervertebral disc replacement device are positioned in the first intervertebral disc space of the spinal column and the second and second intermediate members of the intervertebral disc replacement device are positioned in the second intervertebral disc space of the spinal column.

6. The intervertebral disc replacement device of claim 5, wherein the first intermediate mounting element and the second intermediate mounting element are offset in opposite directions with respect to the longitudinally directed axis of the bases.

7. An insertion plate, comprising:

a base;

a first mounting element of the base operable to engage a first member of an intervertebral disc replacement device; and

a first intermediate mounting element of the base operable to engage a first intermediate member of the intervertebral disc replacement device,

wherein the first and first intermediate mounting elements are offset with respect to one another relative to a longitudinally directed axis of the base running substantially parallel to a longitudinal axis of a spinal column, and the first and first intermediate mounting elements cooperate to engage and orient the first and first intermediate members of the intervertebral disc replacement device for simultaneous insertion into an intervertebral disc space of the spinal column.

8. The insertion plate of claim 7, wherein:

each of the first and first intermediate members include articulation surfaces that cooperate to facilitate articulation of adjacent vertebral bones of the intervertebral disc space when the intervertebral disc replacement device is disposed in the intervertebral disc space; and

the insertion plate cooperates to orient the articulation surfaces in substantial registration with one another for simultaneous insertion into the intervertebral disc space.

9. The insertion plate of claim 7, wherein at least one of the first and first intermediate mounting elements includes a flange having a mounting hole therethrough, the mounting hole for receiving a fastener to couple the flange to at least one of the first and first intermediate members of the intervertebral disc replacement device.

10. The insertion plate of claim 9, wherein the fastener is a mounting screw operable to engage a threaded bore in the at least one of the first and first intermediate members of the intervertebral disc replacement device.

11. The insertion plate of claim 7, further comprising a ledge member extending from a posteriorly directed surface of the base, the ledge member being sized and shaped to extend at least partially between the first and first intermediate members of the intervertebral disc replacement device such that they may be at least one of inserted into and moved within the intervertebral disc space without substantially changing their orientation with respect to one another.

12. The insertion plate of claim 11, wherein at least one of:
at least one of the first and second spaced apart surfaces of the ledge member are contoured for engagement with respective surfaces of the first and first intermediate members of the intervertebral disc replacement device; and
the first surface of the ledge member is curved and the second surface of the ledge member is flat.

13. The insertion plate of claim 11, wherein at least one of:
each of the first and first intermediate mounting elements includes a flange having a mounting hole therethrough, the mounting holes for receiving respective fasteners to couple the flanges to respective ones of the first and first intermediate members of the intervertebral disc replacement device;
the mounting holes are oriented in a direction substantially parallel to a longitudinal axis of the spinal column; and
the ledge member extends in a direction along the posteriorly directed surface of the base that is substantially transverse with respect to the longitudinal axis of the

spinal column.

14. The insertion plate of claim 7, further comprising an insertion member extending away from an anteriorly directed surface of the base and operable to facilitate movement of the intervertebral disc replacement device and insertion thereof into the intervertebral disc space.

15. The insertion plate of claim 14, wherein the insertion member includes an anteriorly extending stem to facilitate movement of the intervertebral disc replacement device such that the first and first intermediate members may be at least one of inserted into and moved within the intervertebral disc space without substantially changing their orientation with respect to one another.

16. The insertion plate of claim 15, wherein the stem is sized and shaped for engagement with an insertion handle to further facilitate movement of the intervertebral disc replacement device.

17. The insertion plate of claim 16, wherein the stem is detachable from the insertion handle to facilitate removal of the handle when the intervertebral disc replacement device is positioned within the intervertebral disc space.

18. The insertion plate of claim 17, wherein one of the stem and the insertion handle includes a bore and the other of the stem and the insertion handle includes a tapered shaft that frictionally engages the bore to facilitate detachable engagement with one another.

19. A method for replacing at least a portion of at least two intervertebral discs in a spinal column, comprising:

removing respective portions of the intervertebral discs from the spinal column;

simultaneously inserting first and first intermediate members of an intervertebral disc replacement device into a first intervertebral disc space of the spinal column, the first and first intermediate members being engageable with and

operable to permit adjacent vertebral bones defining the first intervertebral disc space to articulate with respect to one another, and the first and first intermediate members being detachably coupled to a first insertion plate that is operable to orient the first and first intermediate members with respect to one another for such insertion; and

simultaneously inserting second and second intermediate members of an intervertebral disc replacement device into a second intervertebral disc space of the spinal column, the second and second intermediate members being engageable with and operable to permit adjacent vertebral bones defining the second intervertebral disc space to articulate with respect to one another, and the second and second intermediate members being detachably coupled to a second insertion plate that is operable to orient the second and second intermediate members with respect to one another for such insertion.

20. The method of claim 19, wherein the first and second intervertebral disc spaces are adjacent to one another.

21. The method of claim 19, further comprising at least one of:
manipulating the first and first intermediate members as a single unit by way of the first insertion plate such that they may be at least one of inserted into and moved within the first intervertebral disc space without substantially changing their orientation with respect to one another;

manipulating at least one of the second and second intermediate members as a single unit by way of the second insertion plate such that they may be at least one of inserted into and moved within the second intervertebral disc space without substantially changing their orientation with respect to one another

22. The method of claim 19, further comprising: detaching the first and second insertion plates from the first and first intermediate members, and the second and second intermediate members, respectively, after they have been coupled to the respective vertebral bones.